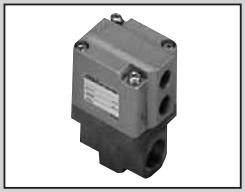


Discrete air operated 2 port valve
(compact cylinder valve)

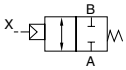
NAB* Series

- NC (normally closed) type, NO (normally open) type, double acting type
- Port size: Rc1/4, Rc3/8
- Working fluid: air, water, gas

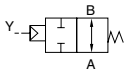
CAD

JIS symbol (*1)

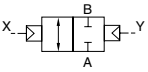
● NC (normally closed) type



● NO (normally open) type



● Double acting type



*1: If port B is normally pressurized, refer to the individual precautions.

Specifications

Item	NAB1-8	NAB1-10	NAB2-8	NAB2-10	NAB3-8	NAB3-10
Actuation	NC (normally closed) type		NO (normally open) type		Double acting type	
Working fluid	Air, gas, water (*1)					
Fluid viscosity mm²/s	500 or less					
Working pressure range MPa	0 to 0.7					
Withstanding pressure (water) MPa	1.4					
Fluid temperature ˚C	-10 to 60 (no freezing) (*2)					
Ambient temperature ˚C	-10 to 60					
Valve seat leakage cm³/min.	0.12 or less (pneumatic pressure)					
Port size	Rc1/4	Rc3/8	Rc1/4	Rc3/8	Rc1/4	Rc3/8
Orifice mm	7					
Cv flow factor	1.2					
C [dm³/(s·bar)]	5.2					
b	0.3					
Weight kg	0.36					
Mounting attitude	Free					
Pilot air pressure MPa	0.25 to 0.7		(*3)			
Pilot port size	Rc1/8					

*1: Refer to the working fluid check list in page 36 of the Introduction.
*2: This applies to both sealants, nitrile and fluoro rubbers.
*3: Refer to page 442 for the pilot air pressure for the NO and double acting types.
*4: Effective sectional area S and sonic conductance C are converted as S = 5.0 × C.

How to order

NAB 1 - 8 - B B

- Model no.
- Ⓐ Actuation
- Ⓑ Port size
- Ⓒ Body/sealant combination *1
- Ⓓ Other options

Symbol	Descriptions
Ⓐ Actuation	
1	NC (normally closed) type
2	NO (normally open) type
3	Double acting type
Ⓑ Port size	
8	Rc1/4
10	Rc3/8

Ⓒ Body/sealant combination

		Body	Sealant
Blank	Std.	Brass	Nitrile rubber
B	Option	Brass	Fluoro rubber
D		Stainless steel	Nitrile rubber
E		Stainless steel	Fluoro rubber

Symbol	Descriptions
Ⓓ Other options	
Blank	No options
B	Mounting plate

<Example of model number>

NAB1-8-BB
Model no.: NAB

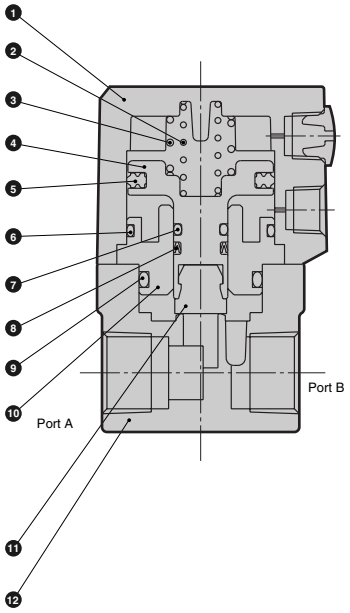
Ⓐ Actuation : NC (normally closed) type
Ⓑ Port size : Rc1/4
Ⓒ Body/sealant combination
: Body - brass, sealant - fluoro rubber
Ⓓ Other options : Mounting plate

Note on model no. selection

*1: For standard, Ⓒ is blank. However, to select other options in Ⓓ, indicate 0 for Ⓒ.

Internal structure and parts list

● NAB1



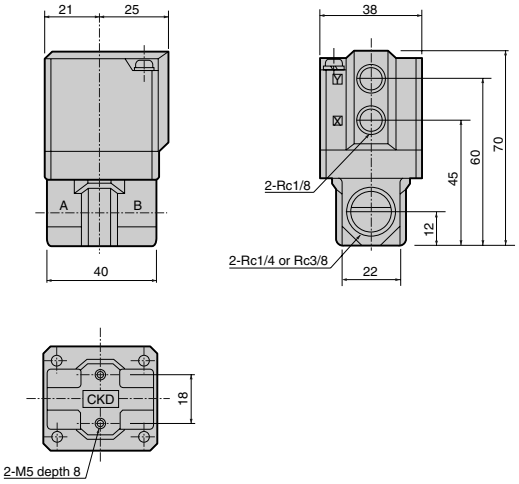
No.	Parts name	Material	
1	Cylinder cover	ADC12	Aluminum die casting
2	Spring	SWP	Piano wire
3			
4	Piston	PPS	Polyphenylene sulfide
5	PSD packing seal	NBR	Nitrile rubber
6	O ring	NBR	Nitrile rubber
7	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
8	MY packing seal	NBR (FKM)	Nitrile rubber (fluoro rubber)
9	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
10	Adaptor	C3604 (SUS303)	Brass (stainless steel)
11	Valving element	NBR (FKM)	Nitrile rubber (fluoro rubber)
12	Body	C3771 (SCS13)	Brass (stainless steel casting)

( ) shows options.

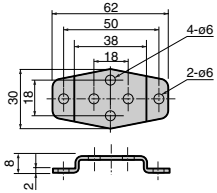
Dimensions

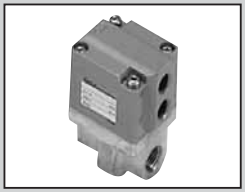
CAD (Page 496)

● NAB*-8/10



● Mounting plate
NAB*-8/10-*B





Discrete air operated 2 port valve
(compact cylinder valve)

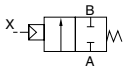
NAB*V Series

- NC (normally closed) type, NO (normally open) type, double acting type
- Port size: Rc1/4, Rc3/8
- Working fluid: low vacuum

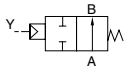
CAD

JIS symbol

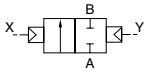
● NC (normally closed) type



● NO (normally open) type



● Double acting type



Common specifications

Item	NAB1V-8	NAB1V-10	NAB2V-8	NAB2V-10	NAB3V-8	NAB3V-10
Actuation	NC (normally closed) type		NO (normally open) type		Double acting type	
Working fluid	Low vacuum (air, water) (*1)					
Fluid viscosity mm²/s	500 or less					
Working pressure range Pa (abs)	1.3×10^2 to 7×10^5					
Withstanding pressure (water) MPa	1.4					
Fluid temperature ˚C	-10 to 60 (no freezing) (*2)					
Ambient temperature ˚C	-10 to 60					
Valve seat leakage Pa·m³/s He	1.33×10^{-3} or less					
Port size	Rc1/4	Rc3/8	Rc1/4	Rc3/8	Rc1/4	Rc3/8
Orifice mm	7					
C [dm³/(s·bar)]	5.2					
b	0.3					
Weight kg	0.36					
Mounting attitude	Free					
Pilot air pressure MPa	0.25 to 0.7		(*3)			
Pilot port size	Rc1/8					

*1: Refer to the working fluid check list in page 36 of the Introduction.
*2: This applies to both sealants, nitrile and fluoro rubbers.
*3: Refer to page 442 for the pilot air pressure for the NO and double acting types.
*4: Effective sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.

How to order

NAB 1 V - 8 - 0 B

- NAB: Model no.
- 1: Ⓐ Actuation (Working fluid (vacuum))
- 8: Ⓑ Port size
- 0: Ⓒ Body/sealant combination *1
- B: Ⓓ Other options

Symbol	Descriptions			
Ⓐ Actuation				
1	NC (normally closed) type			
2	NO (normally open) type			
3	Double acting type			
Ⓑ Port size				
8	Rc1/4			
10	Rc3/8			
Ⓒ Body/sealant combination				
		Body	Sealant	
Blank	Std.	Brass	Nitrile rubber	
B	Option	Brass	Fluoro rubber	
D	Option	Stainless steel	Nitrile rubber	
E	Option	Stainless steel	Fluoro rubber	
Ⓓ Other options				
Blank	No options			
B	Mounting plate			

<Example of model number>

NAB1V-8-0B
Model no.: NAB

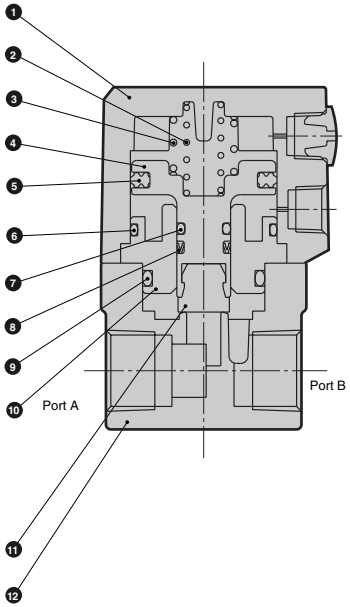
Ⓐ Actuation : NC (normally closed) type
Ⓑ Port size : Rc1/4
Ⓒ Body/sealant combination
: Body - brass, sealant - nitrile rubber
Ⓓ Other options : Mounting plate

Note on model no. selection

*1: For standard, Ⓒ is blank. However, to select other options in Ⓓ, indicate 0 for Ⓒ.

Internal structure and parts list

● NAB1V



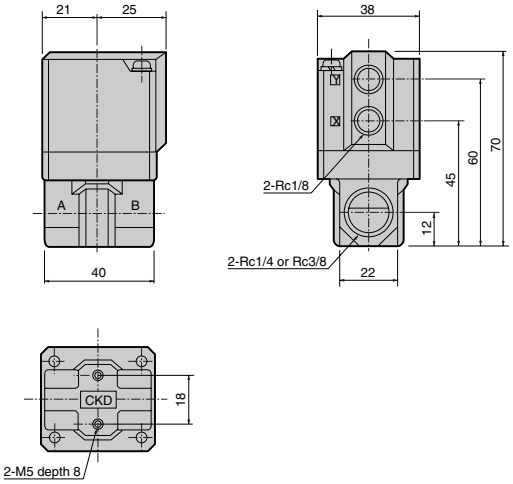
No.	Parts name	Material	
1	Cylinder cover	ADC12	Aluminum die casting
2	Spring	SWP	Piano wire
3			
4	Piston	PPS	Polyphenylene sulfide
5	PSD packing seal	NBR	Nitrile rubber
6	O ring	NBR	Nitrile rubber
7	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
8	MY packing seal	NBR (FKM)	Nitrile rubber (fluoro rubber)
9	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
10	Adaptor	C3604 (SUS303)	Brass (stainless steel)
11	Valving element	NBR (FKM)	Nitrile rubber (fluoro rubber)
12	Body	C3771 (SCS13)	Brass (stainless steel casting)

( ) shows options.

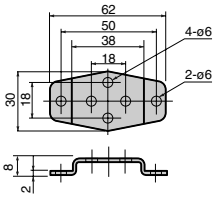
Dimensions

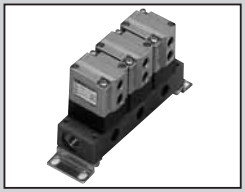
CAD (Page 496)

● NAB*V-8/10



● Mounting plate
NAB*V-8/10-*B





Air operated 2 port valve, manifold
(compact cylinder valve)

GNAB* Series

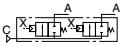
- NC (normally closed) type, NO (normally open) type, double acting type
- Port size: Rc1/4, Rc3/8
- Working fluid: air, gas, water

CAD

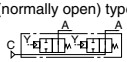
JIS symbol

- Common supply type (port C pressurization)

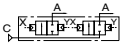
NC (normally closed) type



NO (normally open) type

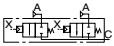


Double acting type

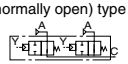


- Individual supply type (port A pressurization)

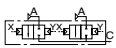
NC (normally closed) type



NO (normally open) type



Double acting type



Specifications

Item	GNAB1-1/5	GNAB2-1/5	GNAB3-1/5
Actuation	NC (normally closed) type	NO (normally open) type	Double acting type
Working fluid	Air, gas, water (*1)		
Fluid viscosity mm^2/s	500 or less		
Working pressure range MPa	0 to 0.7		
Withstanding pressure (water) MPa	1.4		
Fluid temperature °C	-10 to 60 (no freezing) (*2)		
Ambient temperature °C	-10 to 60		
Valve seat leakage $cm^3/min.$	0.12 or less (pneumatic pressure)		
Orifice mm	7		
Cv flow factor	1.0		
C $[dm^3/(s \cdot bar)]$	3.8		
b	0.3		
Mounting attitude	Free		
Pilot air pressure MPa	0.25 to 0.7	(*3)	
Pilot port size	Rc1/8		

*1: Refer to the working fluid check list in page 36 of the Introduction.
*2: This applies to both sealants, nitrile and fluoro rubbers.
*3: Refer to page 442 for the pilot air pressure for the NO and double acting types.
*4: Effective sectional area S and sonic conductance C are converted as S = 5.0 × C.

How to order

GNAB 1 - 1 - 5 - B

Model no.

Ⓐ Actuation

Ⓑ Air supply

Ⓒ Station no.

Ⓓ Sub-plate/body/sealant combination

Symbol	Descriptions
Ⓐ Actuation	
1	NC (normally closed) type
2	NO (normally open) type
3	Double acting type
Ⓑ Air supply	
1	Common supply type
5	Individual supply type
Ⓒ Station no.	
2	2 stations
to	to
10	10 stations
0	Only actuator

Ⓓ Sub-plate/body/sealant combination

		Sub-plate	Body	Sealant	Remarks
Blank	Std.	Brass	Polypropylene	Nitrile rubber	Water
B	Option	Brass	Polypropylene	Fluoro rubber	Solvents
D		Stainless steel	Stainless steel	Nitrile rubber	
E		Stainless steel	Stainless steel	Fluoro rubber	
1		Aluminum	Polypropylene	Nitrile rubber	Air, gas
2		Aluminum	Polypropylene	Fluoro rubber	

<Example of model number>

GNAB1-1-5-B
Model no.: GNAB

Ⓐ Actuation : NC (normally closed) type
Ⓑ Air supply : Common supply type
Ⓒ Station no. : 5 stations
Ⓓ Sub-plate/body/sealant combination
: Sub-plate - brass, body - polypropylene, sealant - fluoro rubber

Internal structure and parts list

● GNAB1

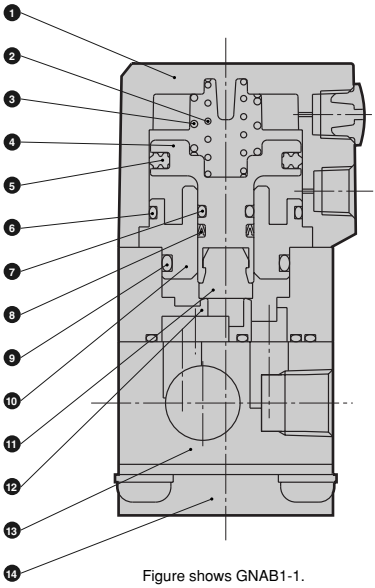


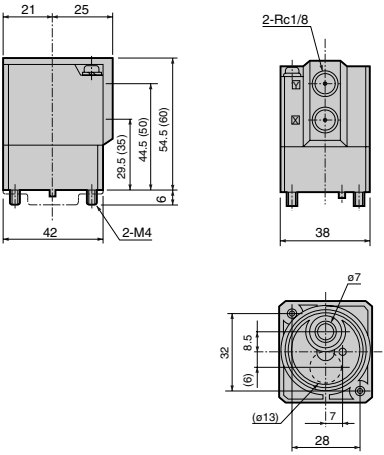
Figure shows GNAB1-1.

No.	Parts name	Material		No.	Parts name	Material	
1	Cylinder cover	ADC12	Aluminum die casting	8	MY packing seal	NBR (FKM)	Nitrile rubber (fluoro rubber)
2	Spring	SWP	Piano wire	9	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
3				10	Adaptor	C3604 (SUS303)	Brass (stainless steel)
4	Piston	PPS	Polyphenylene sulfide	11	Valving element	NBR (FKM)	Nitrile rubber (fluoro rubber)
5	PSD packing seal	NBR	Nitrile rubber	12	Body	PP (SUS303)	Polypropylene (stainless steel)
6	O ring	NBR	Nitrile rubber	13	Sub-plate	C3604 ($^{SUS303}_{A6063}$)	Brass (stainless steel, aluminum)
7	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)	14	Mounting plate	SPC	Steel

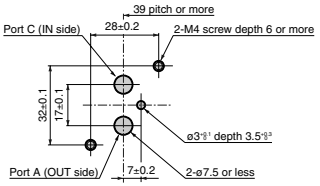
( ) shows options.

Dimensions: Actuator CAD (Page 496)

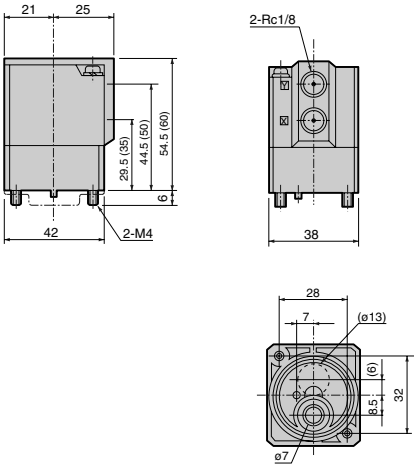
● Common supply type
GNAB1/2/3-1-0



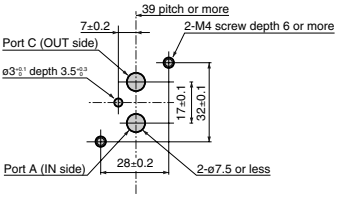
● How to mount actuator



● Individual supply type
GNAB1/2/3-5-0



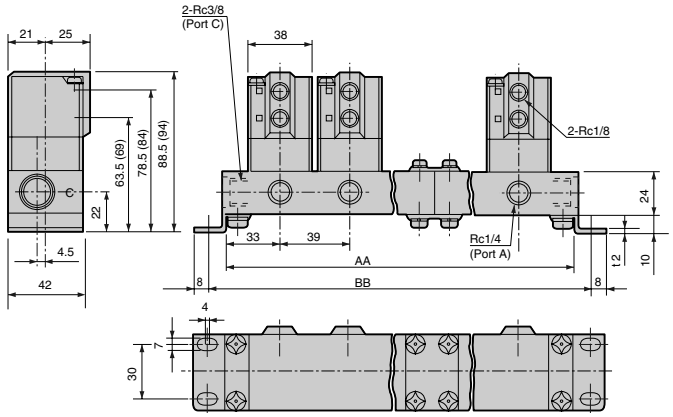
● How to mount actuator



Note 1: Dimensions shown in ( ) are for the stainless steel option.
Note 2: To protect the product, the product is delivered with a plate at the bottom. Remove this plate before starting use.

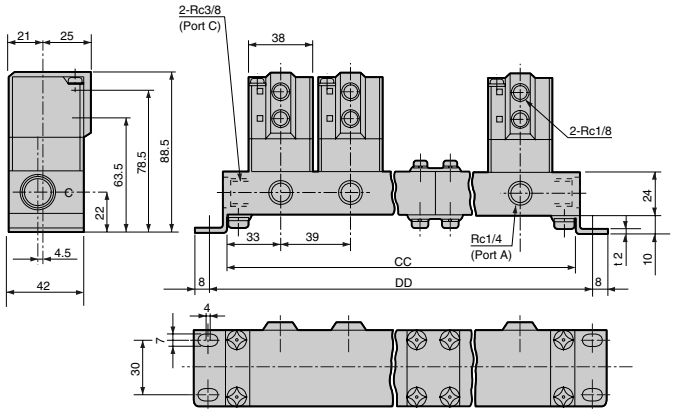
Dimensions: Manifold CAD (Page 496)

● GNAB1/2/3-$\frac{1}{5}$-2 to 10 (brass sub-plate)
(stainless steel sub-plate)



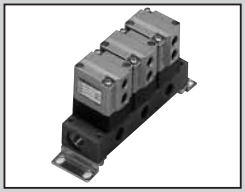
Dimensions shown in ( ) are for the stainless steel sub-plate.

● GNAB1/2/3-$\frac{1}{5}$-2 to 10 (aluminum sub-plate)



Station no.	AA	BB	CC	DD	Manifold structure *1	Station no.	AA	BB	CC	DD	Manifold structure *1
2	106	122	105	121	2 stations x 1	**7**	329	345	327	343	5 stations + 2 stations
3	145	161	144	160	3 stations x 1	**8**	368	384	366	382	5 stations + 3 stations
4	212	228	210	226	2 stations x 2	**9**	435	451	432	448	3 stations x 3
5	223	239	222	238	5 stations x 1	**10**	446	462	444	460	5 stations x 2
6	290	306	288	304	3 stations x 2						

*1: A manifold is configured by combining 2-, 3- and 5-station modules.
*2: Consult with CKD about more than 10 stations manifold.



Air operated 2 port valve, manifold
(compact cylinder valve)

GNAB*V Series

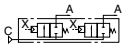
- NC (normally closed) type, NO (normally open) type, double acting type
- Port size: Rc1/4, Rc3/8
- Working fluid: low vacuum

CAD

JIS symbol

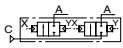
- Common supply type (port C pressurization)

NC (normally closed) type



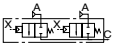
NO (normally open) type

Double acting type



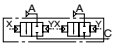
- Individual supply type (port A pressurization)

NC (normally closed) type



NO (normally open) type

Double acting type



Specifications

Item	GNAB1V-1/5	GNAB2V-1/5	GNAB3V-1/5
Actuation	NC (normally closed) type	NO (normally open) type	Double acting type
Working fluid	Low vacuum (air, water) (*1)		
Fluid viscosity mm²/s	500 or less		
Working pressure range Pa (abs)	1.3×10^2 to 7×10^5		
Withstanding pressure (water) MPa	1.4		
Fluid temperature ˚C	-10 to 60 (no freezing) (*2)		
Ambient temperature ˚C	-10 to 60		
Valve seat leakage Pa·m³/s He	1.33×10^{-3} or less		
Orifice mm	7		
C [dm³/(s·bar)]	3.8		
b	0.3		
Mounting attitude	Free		
Pilot air pressure MPa	0.25 to 0.7	(*3)	
Pilot port size	Rc1/8		

*1: Refer to the working fluid check list in page 36 of the Introduction.
*2: This applies to both sealants, nitrile and fluoro rubbers.
*3: Refer to page 442 for the pilot air pressure for the NO and double acting types.
*4: Effective sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.

How to order

GNAB 1 V - 1 - 5 - 1

Model no. GNAB
Working fluid (vacuum) V
Ⓐ Actuation 1
Ⓑ Air supply 5
Ⓒ Station no. 1
Ⓓ Sub-plate/body/sealant combination 1

Symbol	Descriptions
Ⓐ Actuation	
1	NC (normally closed) type
2	NO (normally open) type
3	Double acting type
Ⓑ Air supply	
1	Port A vacuum pump side
5	Port C vacuum pump side
Ⓒ Station no.	
2	2 stations
to	to
10	10 stations
0	Only actuator

Ⓓ Sub-plate/body/sealant combination

		Sub-plate	Body	Sealant	Remarks
Blank	Std.	Brass	Polypropylene	Nitrile rubber	Water, vacuum
B	Option	Brass	Polypropylene	Fluoro rubber	Solvents Vacuum
D		Stainless steel	Stainless steel	Nitrile rubber	
E		Stainless steel	Stainless steel	Fluoro rubber	
1		Aluminum	Polypropylene	Nitrile rubber	Air, vacuum
2		Aluminum	Polypropylene	Fluoro rubber	

<Example of model number>

GNAB1V-1-5-1
Model no.: GNAB

Ⓐ Actuation : NC (normally closed) type
Ⓑ Air supply : Port A vacuum pump side
Ⓒ Station no. : 5 stations
Ⓓ Sub-plate/body/sealant combination
: Sub-plate - aluminum, body - polypropylene, sealant - nitrile rubber

Internal structure and parts list

● GNAB1V

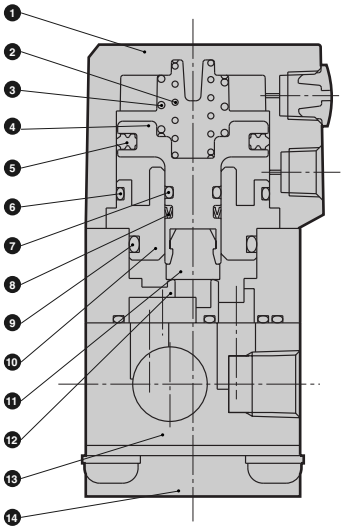


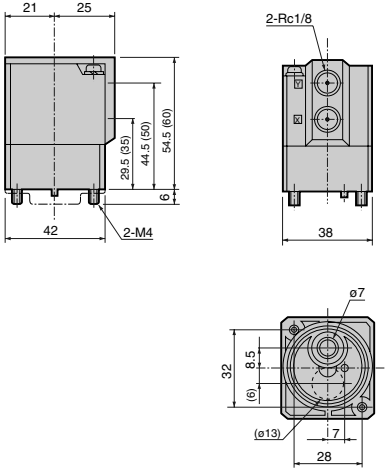
Figure shows GNAB1V-1.

No.	Parts name	Material		No.	Parts name	Material	
1	Cylinder cover	ADC12	Aluminum die casting	8	MY packing seal	NBR (FKM)	Nitrile rubber (fluoro rubber)
2	Spring	SWP	Piano wire	9	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
3				10	Adaptor	C3604 (SUS303)	Brass (stainless steel)
4	Piston	PPS	Polyphenylene sulfide	11	Valving element	NBR (FKM)	Nitrile rubber (fluoro rubber)
5	PSD packing seal	NBR	Nitrile rubber	12	Body	PP (SUS303)	Polypropylene (stainless steel)
6	O ring	NBR	Nitrile rubber	13	Sub-plate	C3604 (SUS303 / A6063)	Brass (stainless steel, aluminum)
7	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)	14	Mounting plate	SPC	Steel

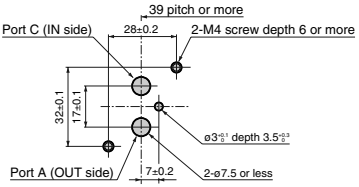
( ) shows options.

Dimensions: Actuator (Page 496)

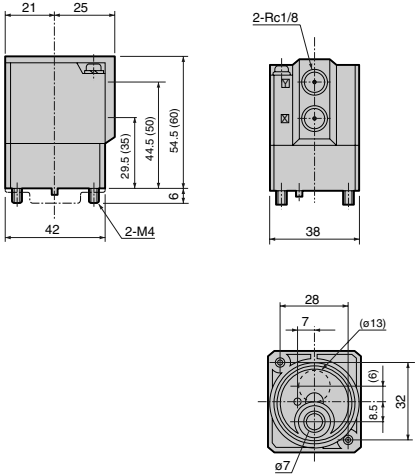
● Port A vacuum pump side
GNAB*V-1-0



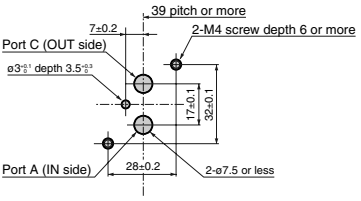
● How to mount actuator



● Port C vacuum pump side
GNAB*V-5-0



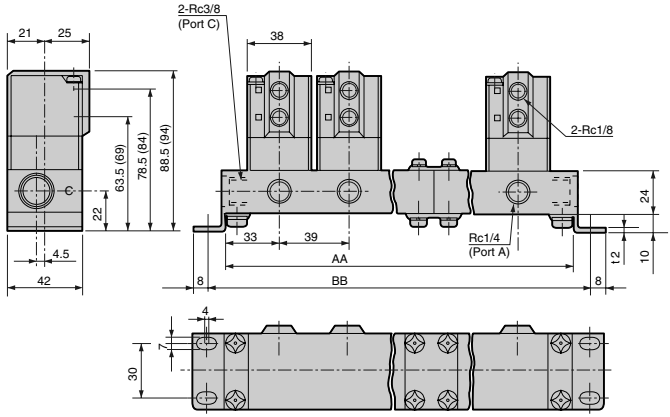
● How to mount actuator



Note 1: Dimensions shown in ( ) are for the stainless steel option.
Note 2: To protect the product, the product is delivered with a plate at the bottom. Remove this plate before starting use.

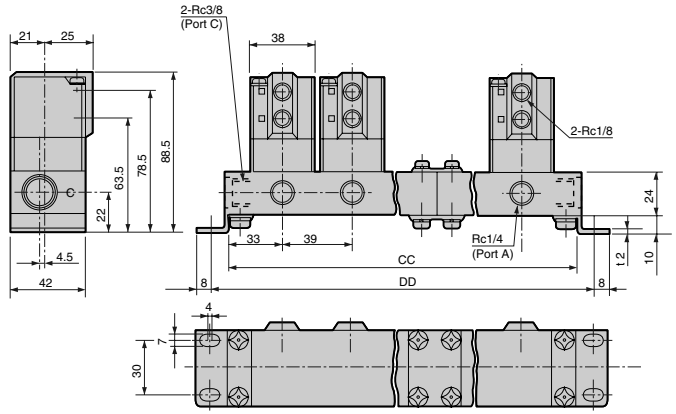
Dimensions: Manifold (Page 496)

● GNAB*V-$\frac{1}{5}$-2 to 10 (brass sub-plate)
(stainless steel sub-plate)



Dimensions shown in ( ) are for the stainless steel sub-plate.

● GNAB*V-$\frac{1}{5}$-2 to 10 (aluminum sub-plate)



Station no.	AA	BB	CC	DD	Manifold structure *1	Station no.	AA	BB	CC	DD	Manifold structure *1
2	106	122	105	121	2 stations x 1	**7**	329	345	327	343	5 stations + 2 stations
3	145	161	144	160	3 stations x 1	**8**	368	384	366	382	5 stations + 3 stations
4	212	228	210	226	2 stations x 2	**9**	435	451	432	448	3 stations x 3
5	223	239	222	238	5 stations x 1	**10**	446	462	444	460	5 stations x 2
6	290	306	288	304	3 stations x 2						

*1: A manifold is configured by combining 2-, 3- and 5-station modules.
*2: Consult with CKD about more than 10 stations manifold.

Electronic Catalog file list

Air operated 2 port valve (cylinder valve)

Air operated type SAB (pages 448 to 463)

Electronic Catalog file list is applied to "CAD DATA 2006".

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
SAB**-8(10)A-*	SAB	sab___8(10)a__	CKD-SAB**-8(10)A-*
SAB**-15A-*		sab___15a__	CKD-SAB**-15A-*
SAB**-20A-*		sab___20a__	CKD-SAB**-20A-*
SAB**-25A-*		sab___25a__	CKD-SAB**-25A-*
SAB**-32A-*		sab___32a__	CKD-SAB**-32A-*
SAB**-32F-*		sab___32f__	CKD-SAB**-32F-*
SAB**-40A-*		sab___40a__	CKD-SAB**-40A-*
SAB**-40F-*		sab___40f__	CKD-SAB**-40F-*
SAB**-50A-*		sab___50a__	CKD-SAB**-50A-*
SAB**-50F-*		sab___50f__	CKD-SAB**-50F-*
SAB**-65F-0(B)		sab___65f_0(b)	CKD-SAB**-65F-0(B)
SAB**-80F-0(B)		sab___80f_0(b)	CKD-SAB**-80F-0(B)
Accessory (mounting plate)		sab_f	CKD-SAB-F

Solenoid valve mounted type SVB (pages 466 to 482)

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
SVB**-8(10)A-*	SVB	svb___8(10)a__	CKD-SVB**-8(10)A-*
SVB**-15A-*		svb___15a__	CKD-SVB**-15A-*
SVB**-20A-*		svb___20a__	CKD-SVB**-20A-*
SVB**-25A-*		svb___25a__	CKD-SVB**-25A-*
SVB**-32A-*		svb___32a__	CKD-SVB**-32A-*
SVB**-32F-*		svb___32f__	CKD-SVB**-32F-*
SVB**-40A-*		svb___40a__	CKD-SVB**-40A-*
SVB**-40F-*		svb___40f__	CKD-SVB**-40F-*
SVB**-50A-*		svb___50a__	CKD-SVB**-50A-*
SVB**-50F-*		svb___50f__	CKD-SVB**-50F-*
SVB**-65F-0(B)		svb___65f_0(b)	CKD-SVB**-65F-0(B)
SVB**-80F-0(B)		svb___80f_0(b)	CKD-SVB**-80F-0(B)
Accessory (DIN terminal box, DIN terminal box + light, T type terminal box, T type terminal box + light, mounting plate)		svb_f	CKD-SVB-F

Compact type (pages 485 to 495)

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
NAB*-8(10)-*	NAB	nab__8_10___	CKD-NAB*-8(10)-*
GNAB*-*(-B)	GNAB	gnab_____b_	CKD-GNAB*-*(-B)
GNAB*-*-1(2)		gnab____1_2_	CKD-GNAB*-*-1(2)
GNAB*-*-D(E)		gnab____d_e_	CKD-GNAB*-*-D(E)
GNAB*-1-0(-B)		gnab__1_0__b_	CKD-GNAB*-1-0(-B)
GNAB*-1-0-D(E)		gnab__1_0_d_e_	CKD-GNAB*-1-0-D(E)
GNAB*-5-0(-B)		gnab__5_0__b_	CKD-GNAB*-5-0(-B)
GNAB*-5-0-D(E)		gnab__5_0_d_e_	CKD-GNAB*-5-0-D(E)

SAB/SVB/NAB

(Cylinder valve)

Air operated 2 port valve

■ For water, air, gas, low vacuum, steam

Overview

In addition to water, air, gas, low vacuum and steam, high viscosity fluids and powder mixed fluids are also available.

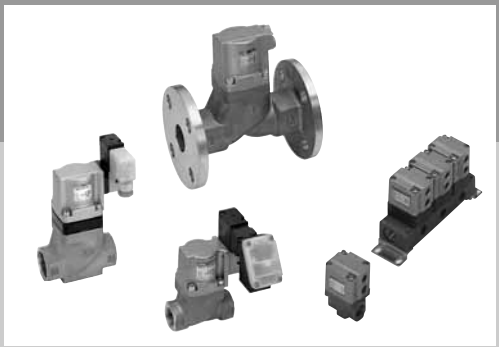
Using the external pilot air, this air operated cylinder valve is driven with the cylinder. Air operated type SAB, solenoid valve mounted type SVB, compact type NAB and manifold GNAB Series are available to meet needs of controlling various fluids.

Features

Wide variation
Rc1/4 to 80 flange are available in accordance with port size.

Available in flammable environment
3 actuations
3 types: NC (normally closed), NO (normally open) and double acting are available.

Cylinder driven with external pilot air ensures certain operations.



CONTENTS

⚠ Always read the precautions in the Introduction and page 440 before starting use.

Series variation

Air operated 2 port valve
(cylinder valve)

Category		Model	No. of port	Actuation						
				NC	NO	Double acting operation	Rc1/4	Rc3/8	Rc1/2	
Cylinder valve	Air operated type 	Water, liquid SAB*W	2 port	●	●	●	●	●	●	
		Air, gas SAB*A		●	●	●	●	●	●	
		Low vacuum SAB*V		●	●	●	●	●	●	
		Steam, water, air SAB*S		●	●	●	●	●	●	
	Solenoid valve mounted type 	Water, liquid SVB*W		●	●		●	●	●	
		Air, gas SVB*A		●	●		●	●	●	
		Low vacuum SVB*V		●	●		●	●	●	
		Steam, water, air SVB*S		●	●		●	●	●	
Compact cylinder valve	Air operated type 	General purpose NAB*		●	●	●	●	●		
		Low vacuum NAB*V		●	●	●	●	●		
	Air operated type manifold 	General purpose GNAB*		●	●	●	Port A ●	Port C ●		
		Low vacuum GNAB*V		●	●	●	Port A ●	Port C ●		

Port size										Page
	Rc3/4	Rc1	Rc1 1/4	32 flange	Rc1 1/2	40 flange	Rc2	50 flange	65 flange	80 flange	
	●	●	●	●	●	●	●	●	●	●	446
	●	●	●	●	●	●	●	●	●	●	450
	●	●	●	●	●	●	●	●			454
	●	●	●	●	●	●	●	●			458
	●	●	●	●	●	●	●	●	●	●	462
	●	●	●	●	●	●	●	●	●	●	470
	●	●	●	●	●	●	●	●			474
	●	●	●	●	●	●	●	●			478
											484
											486
											488
											492

Safety precautions
Always read this section before starting use.

Air operated 2 port valve (cylinder valve)

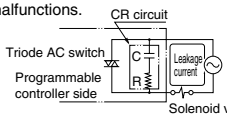
Design & Selection

1. Safety Designing

⚠ CAUTION

■ **Leakage current from other fluid control components**

When operating the solenoid valve with a programmable controller, etc., check that the output leakage current from the programmable controller is within the following specifications. Failure to observe this could lead to malfunctions.



100 VAC: 3 mA or less
200 VAC: 1.5 mA or less
24 VDC: 1 mA or less
must be maintained.

2. Working Fluid

⚠ WARNING

■ **Working fluid**

(1) Do not use this product for fluids other than applicable fluids in catalog specifications.

(2) Before starting use, check the compatibility between the product and working fluid with the working fluid check list (page 36 in Introduction).

(3) The durability of the rod packing seal (MY packing seal) drops if working fluid quality is poor and contains powder, sludge or foreign matter.
If rod packing sealing is poor, working fluid could leak into the cylinder and flow back into pilot air piping, damaging the devices in the air circuit.
Conduct regular maintenance or take appropriate measures.

■ **Special purpose grease**

For cylinder valve, grease is applied to the piston rod sealing sections. When using special fluids, specify the type of grease.
(Example) Oxygen: fluorine grease
Medium vacuum: silicone grease
Fluids for foods: vaseline
Dry air for painting: vaseline

■ **Fluid temperature**

Use within the fluid temperature range.

⚠ CAUTION

■ **External pilot air**

(1) Drainage measures - Compressed air contains high levels of drainage (water, oxidized oil, tar, foreign matter) that can significantly reduce the reliability of pneumatic components. As measures against drain, improve air quality by dehumidifying with an after cooler or dryer, removing foreign matter with a filter, and removing tar with a tar removal filter, etc.

(2) Pre-lubrication - This series is pre-lubricated, so no lubricator is required. However, once lubrication has been started, it must be continued so that the lubricant is not used up. For lubrication, use the turbine oil Class 1 ISO VG32 (#90) or equivalent.

(3) Filter - Install a filter with a 5 μm or less filter element.

3. Working Environment

⚠ WARNING

■ **SVB Series cannot be used in an explosive gas atmosphere. When using in an explosive gas atmosphere, change to the SAB Series, and provide a separate explosion proof solenoid valve on the pilot air circuit.**

■ **If there are high levels of dust in the area, install a downward-facing silencer or elbow joint on the exhaust port so that dust does not enter.**

■ **When using in a place where water splashes on the valve, take appropriate measures to protect it.**

Installation & Adjustment

1. Piping

⚠ CAUTION

■ **Do not mistake the supply port when piping to the product.**

■ **Do not pipe using the solenoid valve section. There is a risk of damage. (For solenoid valve mounted type)**

■ **Check the pilot operation side supply port when piping the GNAB Series.**

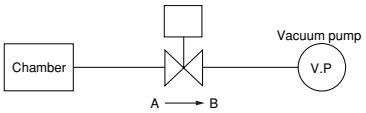
Model no.	Pilot operation side supply port
GNAB1/GNAB1V	X
GNAB2/GNAB2V	Y
GNAB3/GNAB3V	X and Y

■ **When piping the SAB or SVB Series, pay attention to the supply ports on the unit and pilot operation sides.**

Model no.	Unit side supply port	Pilot operation side supply port
NAB1-8/10	A or B	X
NAB2-8/10	A or B	Y
NAB3-8/10	A or B	X and Y
NAB1V-8/10	A	X
NAB2V-8/10	A	Y
NAB3V-8/10	A	X and Y
SAB1W	A	X
SAB2W	A	Y
SAB3W	A	X and Y
SAB1A	B	X
SAB2A	A	Y
SAB3A	A or B	X and Y
SAB1V	A	X
SAB2V	A	Y
SAB3V	A	X and Y
SAB1S	B	X
SAB2S	A	Y
SAB3S	A or B	X and Y
SVB1W	A	P
SVB2W	A	P
SVB1A	B	P
SVB2A	A	P
SVB1V	A	P
SVB2V	A	P
SVB1S	B	P
SVB2S	A	P

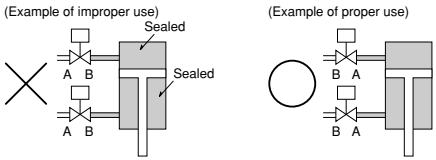
Note 1) With NAB$\frac{1}{3}$-8/10, when both ports A and B are pressurized, connect port A to the normally pressurized side.
If port B is connected to the normally pressurized side, the durability could drop further than when port A is connected.

Note 2) With the SAB$\frac{2}{3}$V or SVB$\frac{1}{2}$V side port, connect the chamber (vacuum holding side) to port A.

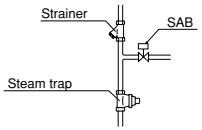


Note that when using for vacuum break, etc., set the pressurized port to port A.

■ **When operating a hydraulic cylinder with a cylinder valve for water, if the valve's port B is piped to the cylinder, pressure in the port and piping rises and excessive pressure is applied on the valve body, leading to damage. In this case, pipe the valve's port A to the cylinder side.**



■ **When using the valve for steam, external leaks could occur depending on fluid properties. Install a steam trap by inclining piping, etc., and remove drainage to prevent the inside of the pipe from rusting.**



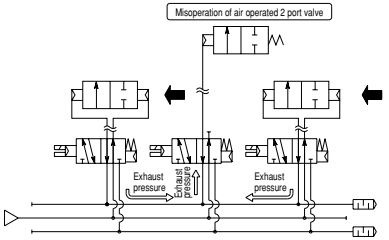
■ **Refer to the table below for tightening torque of the pilot air piping.**

Nominal pipe diameter	Recommended pipe tightening torque (N·m)
Rc1/8	7 to 9

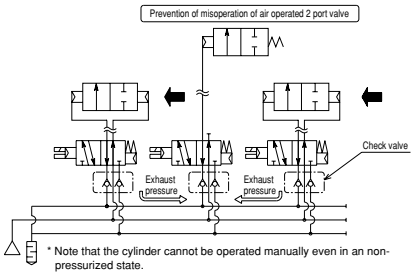
■ **If a manifold is used on the SAB Series operation valve, exhaust pressure could be led in from other valves, which causes malfunctions such as momentary opening of the SAB. When using a manifold, use a valve with a built-in "check valve". Similar problems could occur if exhaust is led in from the SVB Series exhaust (R) port, so when piping the exhaust (R) port, do not connect with other exhaust circuits.**

■ **A check valve is built into CKD pilot operated 3/5 port valve 4G Series.**

Example of pneumatic pressure that could misoperate



Pneumatics system using 4G Series



* Note that the cylinder cannot be operated manually even in an non-pressurized state.

Installation & Adjustment

2. Wiring

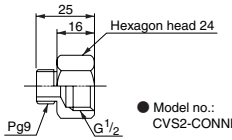
CAUTION

■ **When using an explosion proof solenoid valve, follow the Recommended Practices for Explosion-protected Electrical Installations in General Industries when wiring.**

■ **Wiring of solenoid valve mounted type**

(1) Refer to connections in pages 54 to 55 in the Introduction when wiring to a DIN terminal box or T type terminal box.

(2) The size of the screw for the junction box outlets of the DIN terminal box can be changed from Pg9 to G1/2 using the optional connector below.



● Model no.:
CVS2-CONNECTOR-F4-202936

(3) Coil direction can be changed 180˚. To reverse the electrical connection direction, rotate only the coil. Do not lose internal parts when removing the coil.

During Use & Maintenance

1. Maintenance & Inspection

CAUTION

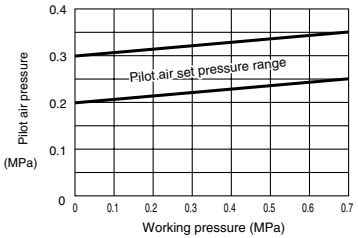
■ **Pilot air pressure**

Use pilot air pressure in accordance with the specifications.

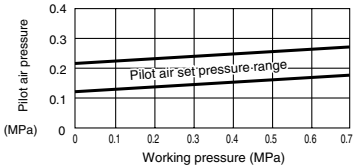
Set the pilot pressure for the SAB/SVB Series NO type and double acting type as shown in the graph below. A sealing fault could occur if pressure is set less than the range shown in the graph at right.

The NC type should be selected when the pilot air cannot be controlled.

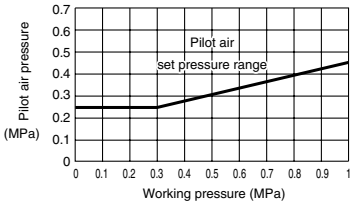
● **NAB$^{2}_{2V}$ Series/GNAB$^{2}_{2V}$ Series**



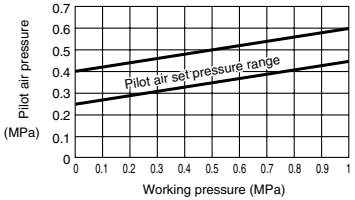
● **NAB$^{3}_{3V}$ Series/GNAB$^{3}_{3V}$ Series**



● **SAB$^{2W}_{3V}$ Series/SVB2$^{W}_{V}$ Series**



● **SAB$^{2}_{3}$S Series/SVB2S Series**



2. Assembling & Disassembling

WARNING

■ **A spring is used in the cylinder cover. When disassembling this type, the spring could pop out and cause injuries, so take care.**

The NC (normally closed) type has a snap ring to prevent the spring from popping out. Do not remove the snap ring.

■ **Assembling pilot solenoid valve (for solenoid valve mounted type)**
If the pilot solenoid valve has been disassembled, assemble it as follows.

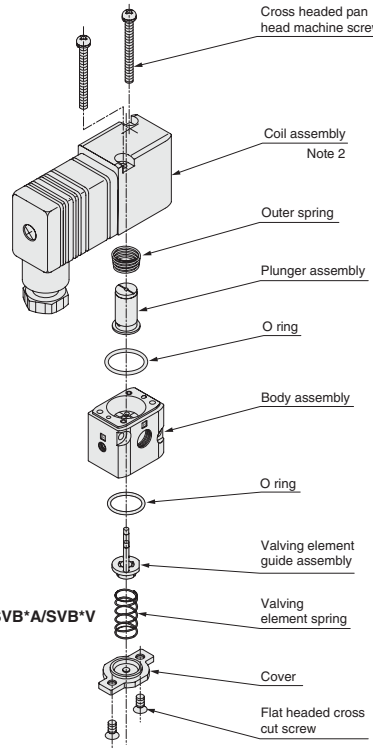
(1) Coil side
· Disassembling
Loosen the cross headed pan head machine screw, and lift up the coil assembly.
The outer spring, plunger assembly and O ring can be removed.
· Reassembling
Set the parts in the sequence of the O ring, plunger assembly, outer spring and coil assembly.
Tighten the cross headed pan head machine screw with a torque of 0.7 to 1.1 N·m.

(2) Cover side
· Disassembling
Loosen the flat headed cross cut screw, and remove the cover.
The valving element spring, valving element guide assembly and O ring can be removed.
· Reassembling
Set the parts in the sequence of the O ring, valving element guide assembly, valving element spring and cover. Tighten the flat headed cross cut screw with a torque of 0.7 to 1.1 N·m.

Note 1: Do not lose the components such as springs during disassembly.

Note 2: The coil assembly direction can be changed 180˚. Loosen the cross headed pan head machine screw to change the direction.

Note 3: Turbine oil is applied to the plunger as a lubricant.



■ **Model no. of pilot solenoid valve (actuator assembly kit) for SVB*W/SVB*A/SVB*V**

CVSE2-ACTUATOR – 0 [*1] – Rated voltage

* Indicate the coil option symbol in field *1.

■ **Model no. of pilot solenoid valve (actuator assembly kit) for SVB*S**

SVB-ACTUATOR-C [*1] – Rated voltage

* Indicate the coil option symbol in field *1.

■ **Gasket direction (for solenoid valve mounted type)**
The gasket has an orientation. Check the orientation when reassembling.